

## **Science Curriculum and Instruction Update Winter 2010**

### **Race to the Top**

On August 24, 2010, the United States Education Department announced that New York State was awarded \$696,646,000 as a winner in the second round of the federal Race to the Top (RTTT) competition. The State's RTTT initiative represents a truly comprehensive reform agenda – one that advances the bold changes needed to turn around failing schools, close the achievement gap, and prepare all children to succeed in college and careers. The Board of Regents and Commissioner are confident that our success in RTTT will help lift the level of achievement for New York State's more than three million students.

The funding that New York State receives from the competition will help advance the Regents reform agenda through 27 projects over four grant years. \$348.3 million of the RTTT funds will be awarded to participating school districts and charter schools over the course of the grant to support implementation, while \$348.3 million will be used to build the capacity of educators statewide and directly support new curriculum models, standards, assessments, teacher and principal preparation and professional development, and the statewide student data system.

The Education Department shall issue Requests for Information to invite interested parties to share information on potential products and/or services that would aid the Education Department and LEAs in implementing RTTT initiatives. Please bookmark [www.nyscr.org](http://www.nyscr.org) and check the New York State Contract Register website frequently for future information.

The Education Department shall issue multiple Requests for Proposals to assist in the planning, development and implementation of the various State level projects contained in New York State's Race to the Top application. Please bookmark <http://www.p12.nysed.gov/compcontracts/compcontracts.html> and check this website for competitive procurement opportunities.

Tentative implementation timelines have been developed for each of the four assurance areas of the RTTT initiative. Several of these projects have a direct impact on science education throughout the State. For instance, the Standards and Assessments Timeline found at <http://usny.nysed.gov/rttt/timelines/standassesstimeline.pdf> includes:

- December 2010 – Issue RFP: Advanced Placement Professional Development for STEM
- February 2011 – Issue RFP: Statewide Curriculum Resource Center for Science, Technology, and Engineering
- May 2011 – Award RFP: Advanced Placement Professional Development for STEM

- July 2010 – Launch Advanced Placement Professional Development for STEM
- August 2011 – Award RFP: Statewide Curriculum Resource Center for Science, Technology, and Engineering
- September 2013 – Statewide Curriculum Models and Formative Assessments for Science, Social Studies and Economics, and the Arts Available for Implementation

The timelines for the three other assurance areas includes projects that have components affecting science education even if they are not specified in the timeline. For instance, the restructuring of PLA (persistently lowest achieving) schools included in the Turn Around Low Performing Schools timeline may involve implementing a STEM high school within a high school.

The Bill and Melinda Gates Foundation has awarded an eight month grant of \$892,500 to the University of the State of New York Regents Research Fund. This award will support the Common Core State Standards (CCSS), a key component of the Regents reform agenda. The funding will support Regents Research Fellows work in developing recommendations to the Regents for the new standards to drive increases in educator effectiveness. As part of RTTT, the statewide curriculum and formative and interim assessments tools will be aligned to the Common Core, teachers will be prepared to teach the Common Core using the State's curriculum, pre-service and in-service professional development will focus on teaching and assessing students on the skills and knowledge within the Common Core, and our teachers and principals will be evaluated based in part on their ability to drive student achievement gains as measured by summative assessments aligned to the Common Core.

This work will also focus on STEM so that more students are prepared for advanced study and careers in STEM through the development of a statewide curriculum in mathematics, as well as, in science and through the design and implementation of a blended grades 3-8 science testing program. It will include integration of computer-based assessment and take advantage of advances in computer technology to stage laboratory simulations, conduct data analysis, and test scientific hypotheses.

In conjunction with RTTT, New York has agreed to be a governing state in a related, federally funded assessment consortium. The Partnership for the Assessment of Readiness for College and Careers (PARCC) has initiated the development of a K-12 assessment system aligned to the Common Core State Standards in English language arts and mathematics. The goal of PARCC is to create an assessment system that will help states dramatically increase the number of students who graduate high school ready for college and careers and provide students, parents, teachers and policymakers with the tools they need to help students – from grade three through high school – stay on track and graduate prepared.

With improvements in the fiscal environment out of the vision of even the most positive economists, the Education Department has had to make some difficult cost-

reduction decisions with respect to its assessment system. To date, State assessments in the sciences continue to be developed and administered to meet and exceed the requirements of the federal No Child Left Behind Act. There are, however, projected budgetary scenarios that include the elimination of State assessments in the sciences that are not needed to comply with the federal statute. More information may be accessed at <http://www.regents.nysed.gov/meetings/2010Meetings/October2010/1010sad2.html>.

### **Science Standards – National/State**

In October 2007, the Board of Regents approved a plan and timeline for the review of New York State's Learning Standards as directed by Chapter 57 of the Laws of 2007. In accordance with statute, review of the NYS Learning Standards for English Language Arts began during the 2007-2008 school year. The timeline also indicated that stakeholders would begin the review and revision process of the New York State Learning Standards for Mathematics, Science, and Technology during the 2011-2012 school year. Early 2008 brought the realization of a changed fiscal climate, not only for the State, but for the nation, as well. In response to this new economic environment, the Board of Regents suspended the review and revision timeline for the remaining content areas but continued the initiative for English language arts.

In April 2009, Governor David Paterson and former Education Commissioner Richard P. Mills signed a memorandum of agreement with Governors and State Commissioners of Education from 48 states, two territories, and the District of Columbia, committing to develop Common Core State Standards. The Common Core State Standards will ensure college success and career readiness for all in English language arts and mathematics for grades K–12. The Common Core State Standards Initiative is a State-led effort coordinated by the National Governors Association Center for Best Practices (NGA Center) and the Council of Chief State School Officers (CCSSO) in collaboration with Achieve, Inc., the College Board, and ACT.

On July 19th, 2010, the New York State Board of Regents adopted the Common Core State Standards (CCSS) for Mathematics and CCSS for English Language Arts & Literacy in History/Social Studies, Science, and Technical Subjects, with the understanding that New York State may add additional expectations to the Common Core. The State Education Department convened two groups of educators (one for ELA and one for Mathematics) to review the CCSS and to determine if any additional standards, up to 15%, were necessary. Both Workgroups recommended adding a small number of student achievement expectations unique to New York State. The recommendations of the ELA group were informed by the prior work completed during the NYS Standards Review Initiative commenced in 2007. The Board of Regents expects to adopt new P-12 ELA and mathematics standards for NYS which include the CCSS in January 2011.

In January 2010, the National Academy of Sciences' Board on Science Education (BOSE), a standing board within the National Research Council (NRC), began the development of a Conceptual Framework for New Science Education

Standards. The NRC posted “A Framework for Science Education” for public review and comment on July 12, 2010.

Department staff participated in a regional meeting convened by the Council of State Science Supervisors (CS<sup>3</sup>) in July 2010 to collectively develop comments regarding the draft NRC document, “A Framework for Science Education.” Achieve, Inc. hosted a webinar providing an overview of the framework including the similarities and differences between the process that will be implemented to develop the “Next Generation Science Standards” and the Common Core State Standards project for ELA and Mathematics. Two key differences are: states are not being asked to “sign on” prior to development of the science standards; and states will decide after the standards are developed to adopt individually or in “common.” Comments from New York were forwarded to the NRC via a summary of collective comments resulting from the CS<sup>3</sup> regional meetings and an online survey posted by BOSE.

The National Research Council Framework Committee has begun the process of summarizing the wide variety of suggestions it received during the feedback period. The committee is currently revising the framework and completing a report regarding the submitted comments. This process will take several months. Once the revisions are complete, the framework will undergo the traditional NRC confidential review by a diverse group of experts. After the committee revises its report in response to reviewers’ comments, the framework report will be finalized and released to the public. Initially, the committee expected the final version to be publicly available in early 2011 but a recent update pushes the date to the spring of 2011.

Achieve, Inc. will then work with a group of states to develop a set of standards for K-12 science education based on and guided by the final NRC Framework Committee report. Achieve, Inc. has already commenced planning and is currently developing a network of state partners. Further opportunities for public comment will be managed by Achieve, Inc. as the science education standards are developed. More information may be accessed at [http://www7.nationalacademies.org/bose/Standards\\_Framework\\_Homepage.html](http://www7.nationalacademies.org/bose/Standards_Framework_Homepage.html).

The Department will continue to actively participate in all available phases of the work to develop and implement the “Next Generation Science Standards.”

#### Timeline

January 2010 – July 2010	BOSE developed “A Framework for Science Education”
July 12, 2010	National Research Council (operating under the auspices of the National Academy of Sciences) released the draft of “A Framework for Science Education”
August 2, 2010	Feedback regarding “A Framework for Science Education” was due to BOSE

Spring 2011	Final draft of “A Framework for Science Education” will be handed over to Achieve, Inc. for development of “Next Generation Science Standards”
Throughout 2011	Achieve, Inc. will develop “Next Generation Science Standards” with several opportunities for public review and comment
Late 2011 – Early 2012	Achieve, Inc. will release “Next Generation Science Standards”